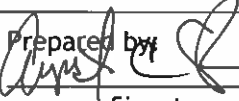


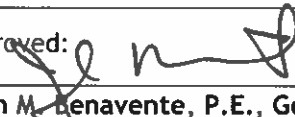


<p align="center">GUAM POWER AUTHORITY STANDARD OPERATING PROCEDURE</p>	<p>Prepared by: <u></u> / <u>August C. Guerrero</u> Signature / Print</p> <p>Title: Chief EPS Dispatcher</p>
<p>TITLE: Switching and Tagging of Electrical Lines and Equipment.</p>	<p>Reviewed by: <u></u> / <u>Francisco C. Santos</u> Signature / Print</p> <p>Title: Power System Control Center Manager</p>
<p>NO SOP-103</p> <p>Supersedes: SOP-103 Dated 12/2/2002</p>	<p>Concurred by: <u></u> / <u>Melinda C. Mafnas, P.E., AGMO</u> Signature / Print</p>
<p>Page 1 of 16</p>	<p>Approved: <u></u> / <u>1/16/2020</u> John M. Benavente, P.E., General Manager / DATED</p>

1.0 **PURPOSE:**

In order to ensure the safety of personnel required to work on or near any electrical lines, circuits and equipment (including all substation switchgear, both high side and low side), and to maintain operating control of the Authority's electric generation and power supply systems, the following instructions shall be carefully observed in every detail.

2.0 **SCOPE:**

This procedure provides requirements and guidance for all personnel working on GPA's lines and electrical equipment.

3.0 **RESPONSIBILITIES:**

- A. It shall be the duty of superintendents, dispatchers, switchboard operators, switchmen, parties working under a work clearance and all responsible parties involved in the operation, maintenance or repair of the Authority's electric lines and equipment, to rigidly observe and enforce these instructions at all times.
- B. It shall also be the duty of these people to report to management and to the Chief Dispatcher any violations of these instructions that may come to their attention during the course of their duties.
- C. Employees knowing of such infractions/non-adherence who fail to report the infraction/non-adherence may be held accountable under these responsibilities.

4.0 **DEFINITIONS:**

For the purpose of clarity and uniform interpretation, the following terms are defined as they apply only to these instructions:

- A. **Clearance Party:** The clearance party is the supervisor/leader who requested the work clearance and is in charge of all aspects of the work clearance in the field. He is responsible for all employees under this work clearance and he alone will be issued permission to go to work and/or surrender the clearance.
- B. **Clearance Surrender:** A statement from the clearance party to the dispatcher informing him of the completion of the work, all personnel are in the clear, and all grounds and equipment have been removed.
- C. **"Go to Work" order:** A statement by the System Dispatcher to the clearance party responsible for the work to be done that the required switches are opened, proper tags have been placed on the switches, and the clearance party will test for voltage, provide grounds and go to work.
- D. **System Dispatcher:** The dispatcher under whose orders switching and tagging operations are to be carried out.
- E. **Switchman:** A properly qualified person who is on a switching list.
- F. **Hotline Tag:** A "tag" issued by the on-duty system dispatcher which gives permission for personnel to work/inspect near an energized GPA line/substation.
- G. **Temporary Grounding:** The establishment of a temporary low resistance metallic connection between an isolated or open section of an electric line, circuit or the current carrying parts of equipment, and the ground.
- H. **Work Clearance:** The systematic and planned protective arrangements taken to ensure the safety of personnel and equipment, provided for by the instructions for switching and tagging.
- I. **Work clearance request:** A request from the crew supervisor (clearance party) which clearly identifies the job location, the equipment to be worked on, and the work to be done. **NOTE:** After the work clearance request has been approved by the proper authority and the necessary switching and tagging programs attached, it becomes a "Work Clearance".

5.0 **WHO MAY OBTAIN AND WORK UNDER A WORK CLEARANCE**

- A. Superintendents/supervisors will select those employees who may be authorized to request, obtain and work under a work clearance. Before an employee is so authorized, he shall be examined and approved by his

superintendent or his supervisor. Such an employee must have the following qualifications:

1. Shall be thoroughly dependable and capable through experience and training of exercising good judgment while preparing for and working under a work clearance.
 2. Shall be familiar with the electrical circuits and equipment of that portion of the system upon which work is to be performed by him or under his direction.
 3. Shall be familiar with the switch numbering system in the area where he will operate.
 4. Shall be familiar with GPA's switching and tagging procedures.
 5. Shall be familiar with approved methods of testing electrical circuits and equipment for electrical potential.
 6. Shall be familiar with the approved methods and procedures for placing and removing temporary grounding equipment.
- B. After any employee has been authorized to obtain and work under a work clearance his name shall be placed on file with PSCC for the area in which he is working, together with proper reference to the IWPS in which he is qualified to obtain a work clearance. This file shall be kept up-to-date.
- C. Any qualified employee obtaining a work clearance for the purpose of maintenance, inspection or testing of lines, circuits or equipment shall either perform the work themselves or supervise the work of others.

6.0 **WHO MAY PERFORM SWITCHING**

- A. Only those personnel authorized in writing, by their supervisor and/or superintendent may obtain a work clearance and perform switching operations.
- B. A person may qualify to perform switching operations without being authorized to obtain a work clearance.
- C. Superintendents and/or supervisors will select those persons who may be authorized to perform switching operations and provide a list to PSCC.
- D. Before a person is so authorized, he/she shall be examined and approved by the superintendent or their supervisor. Such person must have the following qualifications:

1. Shall be thoroughly dependable and capable, through experience and training, of exercising good judgment while performing switching operations.
 2. Shall be familiar with the switch locations in the area in which he is normally required to operate.
 3. Shall be familiar with the mechanical operations of various types of switchgear that he may have the occasion to operate.
 4. Shall be familiar with GPA's switching and tagging procedures.
 5. Shall be familiar with the switch numbering system in the area where he will operate.
- E. After a person has been authorized to perform switching operations his name shall be placed on file with PSCC for the area in which he works, together with proper reference to the IWPS in which he is qualified to perform switching operations. This file shall be kept up-to-date.

7.0 USE OF TAGS

- A. A disconnecting device with visible air breaks between each possible source of potential and the line or equipment to be worked upon shall be opened and tagged. (This does not apply in all cases to electric underground operations and some types of metal clad switchgear where safety interlocks and specific tests for potential may be employed).
- B. Tags shall be of two types – RED TAGS and YELLOW TAGS (see Exhibit A). A RED TAG shall be used for work clearance to provide protection of personnel and equipment. A YELLOW TAG shall be used to advise/caution employees of other than normal conditions.

Each tag will display a unique control number that will be entered into the log with PSCC.

- C. A red tag will be placed on open switches and equipment. Under no circumstances shall a switch bearing a red tag be operated or tested without clearance from the Chief or System Dispatcher.
- D. Any number of red tags may be attached to a switch at the same time, allowing a number of persons to work under separate work clearances.
- E. NO switch or equipment within a line or section of line protected by red tags shall be operated except with the knowledge and consent of the Chief Dispatcher and all persons holding a work clearance on that line or section of

line.

- F. In the case of a remotely controlled switch that may be operated (other than by supervisory) from more than one location, each operational button or handle shall be tagged. If supervisory control is provided, the supervisory cut-off switch must also be tagged. (Markers or symbols must also be used at the mimic board as a reminder to the System Dispatcher).
- G. When a red tag is placed, the following information shall be entered (or verified) in the records and entered onto the tag.
1. Equipment name or switch number of devices being used for the purpose of disconnection.
 2. Time and date of disconnection.
 3. Name of the clearance party requesting disconnection (Tagged in the name of).
 4. Name of the System Dispatcher (person issuing the tag).
 5. Name of the person placing/hanging the tag.
- H. When a tag is removed, the following information shall be entered (or verified) in the records and printed clearly onto the tag.
1. Time and date tag removed.
 2. Name of clearance party requesting removal (tag released by).
 3. Name of person removing tag (signature will be required on the portion, of the tag, being returned to PSCC for record filing)

NOTE: The name of the person requesting removal of a tag must be the same as the person requesting disconnection unless the records show the employer has demonstrated the following:

4. Verification by the employer that the authorized employee who applied the lockout/tagout device is not at the facility;
5. Making all reasonable efforts to contact the authorized employee to inform him that his lockout or tagout device has been removed; and
6. Ensuring that the authorized employee has this knowledge before he resumes work at the facility.

- I. Switchmen shall not place or remove tags except under orders of the System Dispatcher.
- J. Completed switching orders (form 5057/91) and tags when removed shall be sent to PSCC for filing.

8.0 **HOW AND WHERE TAGS ARE PLACED**

- A. Tags shall be attached to or as near as possible to the manual control levers of any switch or equipment and/or the remote-control button or handle of the switch.
- B. Tags shall be attached to or as near as possible to the middle phase blade of a stick-operated set of disconnect switches. An approved type of insulated tagging device shall be used for this purpose. In those cases where any confusion is apt to exist in the placing of tags near the switch operating handle or disconnect blades, a special attachment bearing the switch or equipment number shall be provided.
- C. Yellow tags must not be used to provide safety clearance for the protection of personnel working on electrical apparatus.
- D. Yellow tags should be attached to the control device of the equipment that needs special instructions when being operated, in the station or in the field.
- E. Yellow tags will be used when directed by the System Dispatcher or supervisor to indicate conditions other than normal and removed under their direction.
- F. In every case where a yellow tag is used, the reason and name of the person reporting the condition must be clearly stated.
- G. Red tags may be placed on switches or equipment bearing a yellow tag, to provide protection for a work clearance.

9.0 **CAUTION**

When work is being performed on an automatic or remote-controlled switch that involves any of the mechanical gear, moving parts or switch contact members, and during those periods when it is not necessary to operate the switch mechanism, the control circuit shall be made inoperable by opening the control circuit switch, removing control circuit fuses or disconnecting control circuit potential leads. In some cases, mechanical blocking of the switchgear mechanism may also be necessary for complete protection. In the case of switchgear operated by hydraulic or pneumatic power, closing and tagging of oil or air valves in the pipe lines to the master cylinder or the opening of pressure relief valves shall be required. A red-tag shall be used on these valves. This is the responsibility of the clearance party.

Important: Tags indicating dates more than 24 hours old, shall not be assumed as appropriate. The request for clearance and signature on tags must be current. Crews shall verify that the clearance boundaries remain in the required positions and red tags remain in place prior to proceeding with work.

10.0 WORK ON LINES OR EQUIPMENT NOT REQUIRING A WORK CLEARANCE REQUEST

The System Dispatcher shall be notified in advance in all cases before any live line work, testing operations or inspection operations are performed on lines or equipment normally under his control. This must be done even though no work clearance is required. All personnel that are working/inspecting near energized GPA lines are required to request from the on-duty dispatcher a “**Hot Line tag**” on the circuit(s) or Substation where they are working/inspecting. The following shall be provided to the System Dispatcher:

- A. Name or Call Sign of the person requesting for the **Hot Line Tag**
- B. Circuit(s)/Substation where they are working.
- C. Exact location of area they will be working.
- D. Purpose of conducting the work or inspection.
- E. How they can be contacted should the System Dispatcher need to contact them.
- F. Should GPA crews be working in the vicinity of a Navy line, then the System Dispatcher will contact the Navy DCC and obtain a “Hot Line Shield” from the Navy DCC.

The on-duty System Dispatcher will enter this information into the Hot Line Clearance Log and based on his assessment of the system give permission to proceed with the work if warranted.

Following completion of the Work/Inspection, it is the responsibility of the Hot Line Tag requestor to inform the System Dispatcher he is completed with the work, clear of the area, and then return the Hot Line Tag to the System Dispatcher.

NOTE: No breaker or line will be operated or reenergized until the System Dispatcher has contacted all affected Hot Line Tag Holders and has ensured they are clear from the area.

Superintendents/supervisors will select and qualify those employees who may be authorized to request, obtain and work under a Hot Line Tag. All authorized employees shall comply with this SOP.

11.0 HOW TO REQUEST FOR LINES TO BE TAKEN OUT OF SERVICE

- A. An outage request for a work clearance, except in an emergency will be made in writing on Form 5057/80 and as far in advance of the job as possible, minimum time of 48 hours. Saturday and/or Sunday outage requests shall be requested on the preceding Wednesday, or at the discretion of the T&D Manager or the Chief Dispatcher.
- B. In all cases where any maintenance work, testing operations or inspection operations are to be performed, the Chief Dispatcher will require the following information:
1. Exact nature of work and location.
 2. Time work clearance will be required.
 3. Approximate time work clearance will be surrendered.
 4. Approximate number of days work clearance will be required.
 5. All lines, switches or other equipment that will or may be involved.
 6. Crew(s) responsible for work, and where and how they may be reached by telephone or radio.
 7. A drawing which depicts the exact location where work is to be done and the clearance boundaries used to isolate the work area shall accompany the work clearance.
 8. Should the clearance request affect GPA customers, then a **Public Service Announcement** (See Exhibit B) shall accompany the Clearance Request. Door hangers (MR. KW, Exhibit C) can be used in lieu of a PSA should the number of customers affected be such that the Clearance requestor is able to notify all customers affected.
 9. At no time should a scheduled outage affecting customers be for greater than 6 hours unless approved by the Chief Dispatcher. All efforts shall be made to ensure customers are restored within this time limit.
- C. The Chief Dispatcher will investigate load conditions and requirements that may exist at the time of the job, if in his judgment the planned work can be performed, the request will be granted.
- D. In those cases when work is to be done on the 115KV or lower voltage lines which parallel these systems, the Chief Dispatcher will coordinate the request

with other parties involved before an outage request is granted.

- E. The Chief Dispatcher shall ensure the work to be done will not interfere with or make unsafe any other work on the system that is to be done at the same time.
- F. After the outage request has been granted and before the job is started, the System Dispatcher shall order the switchmen at each generating station or substation where switching is to be done, to open or close in proper sequence the necessary switches and to make out and attach the proper tags.
- G. The switchman shall have a copy of the switching order and shall be familiar with the switching sequence prior to actual switching.
- H. After disconnecting switches have been opened, the switchman shall be sure to visually check the open position of all blades.
- I. After disconnecting switches have been closed, the switchman shall visually check the closed position of all blades.

12.0 **ISSUING THE "GO TO WORK" ORDER**

- A. After all necessary switching has been performed as ordered and tags have been placed, the System Dispatcher will contact the clearance party and will enumerate the location and number of each switch that is opened and tagged or placed in a protective position. He will then give the clearance party instructions to test for voltage, install protective grounding and "go to work."
- B. After all switching and tagging operations have been checked and confirmed with the System Dispatcher; the person(s) obtaining the work clearance will satisfy themselves that the switches opened for their protection agree with the wiring diagram of that portion of the system involved in the job. They will then perform or supervise testing for voltage and grounding operations on the lines, circuits or equipment to be worked on.

13.0 **CLEARANCE SURRENDER**

- A. When the clearance party has completed the work, he must be absolutely sure that all personnel under his direction are safely clear of all lines and equipment, and he shall hereafter consider the line or equipment energized. He shall then have all temporary grounds removed and shall make sure the line or equipment is ready for service. The clearance party shall then report to the System Dispatcher stating personnel are in the clear, all grounds are removed and the line or equipment may be restored to service.
- B. When all clearance parties holding a work clearance on a line or equipment

have surrendered their work clearance, the System Dispatcher may then order tags removed and switches operated to restore the line or equipment to service.

14.0 **EXTENSION OF TIME**

When a definite time has been granted by the System Dispatcher for performing the job, it shall be understood that the line or equipment must be ready for service at the expiration of the time period. If the clearance party finds it impossible to finish the job on time, he shall notify the System Dispatcher as soon as possible requesting an extension of time or further instructions.

15.0 **WORK ON CIRCUITS ALREADY TAGGED**

If a second party desires to work on any circuit that has a work clearance, it will be necessary for the second party to request an additional work clearance and to have his tags attached to switches by orders of the System Dispatcher and to attach his own grounds.

16.0 **NEW INSTALLATIONS**

- A. These rules apply to all new work as soon as any connection is made which permits any part of the new lines, circuits or equipment to be energized by the operation of switchgear or other devices. In such cases switch numbers will be assigned and placed, and switches will be tagged in accordance with these instructions.
- B. Lines, circuits or equipment that cannot be made "alive" by the operation of switchgear or other devices but could become energized because of cross-overs, parallel lines, etc., must be discharged and grounded before being worked on.

17.0 **COMMUNICATIONS**

- A. Authority two-way radios shall be used to carry out switching and tagging procedures.
- B. All switching and tagging orders shall be repeated back, verbatim, to the System Dispatcher giving the order. If the quality of the communication system used is inadequate for clear transmission and confirmation of orders, another method (e.g. telephone facilities) shall be used so as to eliminate any possible error in switching or tagging instructions.

18.0 **INABILITY TO COMPLY WITH THESE INSTRUCTIONS**

If for any reason it is not possible to comply completely with the switching and tagging instructions, the superintendent and Chief Dispatcher or supervisor in charge, during their

absence, shall be advised at once and he will decide what emergency actions shall be taken.

19.0 **ELECTRIC UNDERGROUND NETWORK SYSTEMS**

High voltage primary underground systems shall be operated in accordance with these instructions.

20.0 **TAGGING OF GPA SWITCHES FOR EMPLOYEES OF PUBLIC WORKS CENTER (U.S. NAVY)**

- A. Load conditions and requirements permitting, the GPA Chief Dispatcher may on request from the dispatcher of Public Works Center, U.S. Navy, order specific switches opened and/or tagged as requested. The GPA System Dispatcher shall report back to the Navy's Dispatcher after such switching and tagging has been completed.
- B. It shall be understood that the opening of switches and the placing of tags on the lines and equipment of the Guam Power Authority for the employees of the Public Works Center, U.S. Navy, shall not constitute a guarantee that any lines or equipment connected to such switches are "dead".

21.0 **TAGGING OF GPA SWITCHES FOR EMPLOYEES OF INTERCONNECTED MUNICIPAL OR INDUSTRIAL CUSTOMERS**

- A. If necessary arrangements have previously been made between officials of a power customer and the Guam Power Authority, certain approved employees of the power customer may, on specific order from the GPA System Dispatcher, operate and tag terminal switches in the line or lines connecting their facilities with our system. If it is deemed necessary, the System Dispatcher will arrange to have a properly qualified GPA employee present when such switching and tagging operations are performed. The names of those power customer employees qualified and approved to perform switching and tagging operations shall be filed with PSCC.
- B. It shall be understood that the employees of industrial power customers or contractors are not permitted to obtain a regular mark-up on lines and equipment of the Guam Power Authority. If necessary arrangements have previously been made between officials of a power customer on specific permission from GPA's System Dispatcher, he may be issued a work clearance on terminal switches of the line or lines connecting their facilities with our system. It shall also be understood that the opening of switches and the placing of tags on the lines and equipment of the Guam Power Authority for the employees of an industrial power customer shall not constitute a guarantee that any lines or equipment connected to such switches are "dead." These facts must be clear to officials of industrial power customers requesting the operation and tagging of switches.

22.0 WORK ON LINES OR EQUIPMENT INVOLVING THE OPERATIONS OF SWITCHES OF ANOTHER UTILITY SYSTEM

When any work by GPA employees involves the operation of switches of another utility system, the rule of the other utility shall be followed; however, GPA's instructions must also be adhered to as closely as possible. PSCC will request necessary switching and tagging on the system of the other utility company through their coordinator.

23.0 EMERGENCY WORKCLEARANCE

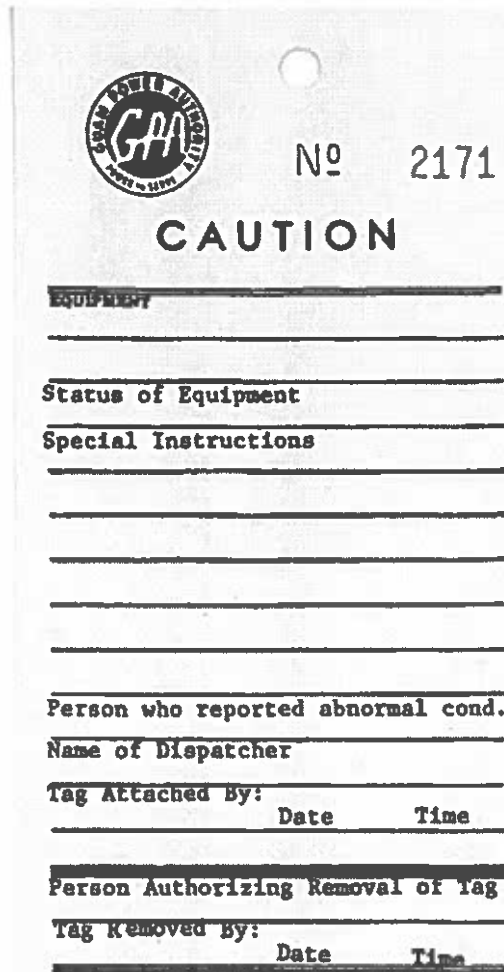
When an outage occurs on high voltage lines and/or equipment and it becomes necessary to do emergency maintenance on those lines or equipment, the System Dispatcher is tasked with the responsibility of logging a switching and tagging document for that project. Should time permit, this pre-planning will be made available to switchmen, crew leaders, and appropriate supervisors before any switching and tagging is ordered by the System Dispatcher.

24.0 EMPLOYEE TRAINING

- A. Training on this procedure will be the responsibility of PSCC and Division Superintendents.
- B. All employees must sign a roster sheet to record that they have received training on this procedure.
- C. Records of this training will be filed with:
 - 1. Human Resource Office
 - 2. Division Manager's Office
 - 3. Safety Office
- D. New, Transferred, Promoted, or Detailed employees shall receive training on this procedure prior to performing work.
- E. All employees will receive refresher training every two years or when updates and/or modifications are made.

EXHIBIT A

Yellow Tag



CAUTION

EQUIPMENT

Status of Equipment

Special Instructions

Person who reported abnormal cond.

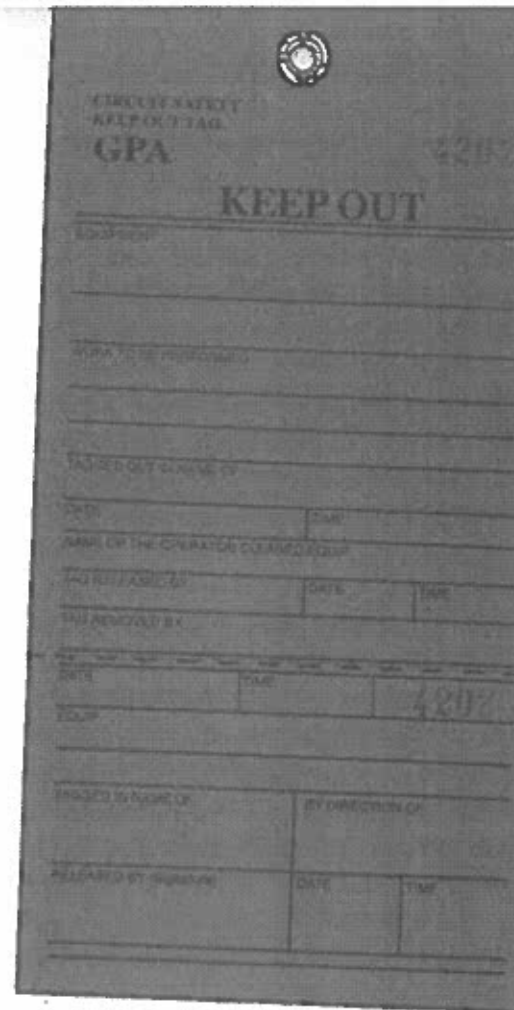
Name of Dispatcher

Tag Attached By: **Date** **Time**

Person Authorizing Removal of Tag

Tag Removed By: **Date** **Time**

Red Tag



KEEP OUT

Tag Out Name is

DATE **TIME**

NAME OF THE OPERATOR CLAIMED EQUIP

Tag Released By **DATE** **TIME**

Tag Removed By

DATE **TIME**

Tagged by Name of **BY DIRECTION OF**

Released by Signature **DATE** **TIME**

EXHIBIT B
PSA ANNOUNCEMENT SAMPLE FORM



GUAM POWER AUTHORITY

ATURIDĀT ILEKTRESEDĀT GUAHAN
P.O.BOX 2977 • AGANA, GUAM U.S.A. 96932-2977

Advisory No:
Circuit No.:

Release Date

SCHEDULED POWER OUTAGE

The Guam Power Authority advises there will be a power outage on:

The area(s) affected:

REASON:

Customers using backup generators, please ensure your main breaker is in the open position to ensure safety to the GPA crews working on the lines.

GPA regrets the inconvenience caused to customers in these areas, but the outage is necessary as a safety precaution while crews are working.

Your cooperation is appreciated. Thank you.

THE GUAM POWER AUTHORITY

FOR OFFICE USE ONLY

Submitted by: _____

Approved by: _____

CODES:

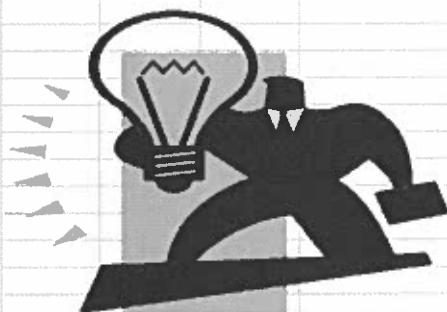
* REVISED

ADDED

EXHIBIT C
MR. KW
DOOR HANGER



PARDON ME, FOLKS



AFTER A BRIEF "INTERMISSION,"
I'LL BE BACK **MORE READY** THAN EVER

ELECTRICITY WILL BE OFF

FROM: GUAM POWER AUTHORITY

TO: AFFECTED CUSTOMERS

DATE:

TIME:

Most of the time we make repairs and changes in equipment without interrupting your service.....but when major changes are made to keep ahead of rapid community growth, short interruptions are sometimes necessary.
So pardon me folks while I take time out to do an important job, and thanks for your patience and cooperation.

Sincerely,
Mr. Kilowatt
YOUR ELECTRIC SERVANT

GUAM POWER AUTHORITY
TELEPHONE NO. 635-2005/2006

EXHIBIT D
Clearance Request
 Form 5057/80

FORM 5057/80



GUAM POWER AUTHORITY

CLEARANCE REQUEST

SUBMITTED BY		DATE	DESIRED DATE	TIME (FROM)	(TO)
LOCATION					
PART I - CLEARANCE	EQUIPMENT TO BE WORKED ON				
	WORK TO BE PERFORMED				
REMARKS					
Your attention regarding this matter is greatly appreciated.					
PERSON IN CHARGE		APPROVED			
PART II - POWER DISP. OFFICE	RECEIVED	BY	CUSTOMERS AFFECTED		
		DATE	TIME		
	CLEARANCE STARTING				
	CLEARANCE CLOSING				
	APPROVING SUPERVISOR				
	EQUIP. TO BE CLEARED BY				
	EQUIPMENT RESTORED BY				
PART III - POWER DISP. OFFICE	TEST TO BE PERFORMED BY				
	EQUIPMENT CLEARED, READY FOR WORK	DATE	TIME	REMARKS	
		BY			
	CLEARANCE RELEASED	DATE	TIME		
	BY				
EQUIPMENT RETURNED TO SERVICE	DATE	TIME			
	BY				
DUTY DISPATCHERS				CLEARANCE REQUESTING	

CODES:

* REVISED

ADDED